

REFERENCE

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CORDLESS TERMINAL FOR CONNECTION TO COMPUTER AND  
COMMUNICATION NETWORKS AND/OR INFORMATION NETWORKS

Cross Reference to Related Applications

This application is a continuation application of  
5 PCT/ES02/00107 filed March 11, 2002, claiming priority of  
Spanish Application No. ES 200100576 filed March 13, 2001,  
which are included in their entirety by reference made  
hereto.

10 BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to the field of  
electronic devices, and more particularly to a cordless  
15 terminal for connecting to networks.

Description of the Related Art

As a result of the present increase that is taking  
place in telecommunications, the access to global computer  
20 communication networks, also known as the Internet system,  
is becoming more necessary every day. This is not only  
affecting the business world but also has spread to the  
domestic and leisure scope.

At the present time, said connection to the Internet is  
25 carried out by means of Personal Computers or similar  
devices being either desktops or laptops. These computers

are generally placed in fixed places, on a table or desk  
and connected by means of an electrical cable to the  
alternating current supply net and by means of another  
cable to the telephone or communications network, in  
5 addition to the connections to other peripherals such as  
printers, scanners, etc. This poses the problem that said  
computer systems can not easily be carried to the place  
where a constant communication is desired. There is the  
possibility of using laptop computers (the notebook type)  
10 connected to mobile telephones, but this solution is  
expensive, complicated to handle and cannot be connected to  
other peripheral devices.

#### BRIEF SUMMARY OF THE INVENTION

15 The aim of the present Patent Invention application is  
to register a cordless terminal for connecting to computer  
networks and communication and/or information networks that  
includes significant innovations and advantages compared to  
the present terminals and computers that are used for  
20 similar purposes for the connection to information networks  
and especially to the Internet.

More specifically the new invention consists of a  
reduced sized terminal that is based on webpc architecture  
(a computer that is basically dependent on the applications  
25 and resources resident in one or more remote servers) and

which allows a direct Internet connection for its more general uses, surfing the net, handling e-mail and consulting databases amongst many others. This terminal is characterised in that it is made up of portable and  
5 cordless module that can operate away from the base or support without losing data connection, being located in the base or support the energy supply source and the direct connection to the communication nets via asynchronous protocol, as for example connection by basic telephone  
10 network, GSM mobile telephone network, ADSL network or other alternative data transmission system, such as transmission via the electrical supply system (PLC).

#### BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

15 Figure 1. Showing a perspective view of the preferred physical make up.

Figure 2. Showing a functional block scheme.

#### DETAILED DESCRIPTION OF THE INVENTION

20 The cordless terminal for connecting to computer and communication networks and/or information networks which is the object of this present patent application is characterised in that it physically comprises a reduced size and totally independent mobile terminal, which is  
25 easily carried by a person and allows its operation in any

situation. In addition, the construction of said terminal has to have a very low cost and intuitive use even for people who are not experts in information technology and the handling of computers.

5        In order to do this, the use of a reduced sized computer-terminal has been thought up which is made up of two modules. The main module is made up of a reduced size motherboard with the necessary add-ons for its set up and handling, being comprised of a liquid crystal screen for  
10 the viewing and a tactile keyboard for its control, all being supplied by batteries. Said module is connected to a support base using 'wireless' transmission with a maximum range for its freedom of movement preferably equivalent to 50 metres and immune from interference and obstacles, such  
15 as radio frequency or microwave transmission. Said support is the module that is directly connected to the electricity supply network and to a modem or to the communications line to the outside. In addition, the support module has the functions of charging the batteries of the mobile terminal  
20 and the possibility of concentrating the connections with the peripherals, such as printer, scanner or any other. Said support module and the mobile terminal are always connected to each other by the cordless network, in such a way that the terminal always has access to the Internet by  
25 using the cordless protocol or to the peripherals connected

to the support module. However, the mobile terminal can be left on the support module for battery recharge and direct connection by cable to the peripherals and the communications associated to the support module, as for example, a greater speed USB (Universal Serial Bus) connection. The external shape of the mobile terminal will be preferably similar to a small book or similar, having a flat shape and whose screen occupies the greater part of one of its main sides.

Functionally the mobile terminal (2) comprises a computer motherboard (3) with a processor, working memory and the majority of the peripheral controllers incorporated, especially the video controllers for its connection to a TV or similar, sound and large storage devices. The motherboard (3) used will be preferably a 'Geode' board from the company *National Semiconductor*, which has a small size and reduced consumption offering sufficient features for the working of the mobile terminal (1), including standard connections of various peripherals for their eventual use. The working RAM memory (Random Access Memory) will be large enough for the applications that would be used.

The mobile terminal (2) is fed by means of rechargeable batteries (6), selecting as preferent elements batteries using the NiHM (*Nickel Metal Hydride*) technology

due to their high-energy capacity and recharging possibilities.

In respect of the large storage device, the use of a non-volatile solid state memory disk (*Disk On Chip*) (11) has been chosen for the storage of the operating system and the basic operating applications, such as the browser for the hypertext pages, the e-mail client application and the diagnostic and handling utilities for the video and sound multi-media capabilities that are fitted to the motherboard (3). Said DOC disk (11), as a result of not having any mechanical parts, is stronger and has a lower consumption.

The motherboard (3) is connected to a viewing monitor; by choice, the monitor will be a liquid crystal (LCD) type monitor (4) that can be directly connected to the graphic system of the motherboard (3). This liquid crystal screen (4) is preferably of the TFT (Thin Film Transistor) type, since said motherboard (3) is prepared for direct connection to it.

The TFT liquid crystal screen (4) needs a backlighting source, supplied by a low consumption fluorescent lamp. Said fluorescent lamp is fed by a high-tension electric inverter (7) connected directly to the batteries (6).

The presence of a tactile panel (5) or pressure sensitive pad has been envisaged on the LCD screen (4) for the introduction of the commands. In this way, the entry of

commands via said tactile panel (5) is intuitive; this can be by using graphical icons, insertion point or handwriting recognition. Said panel (5) is by preference the 4-wire resistor type managed by a strong data translation  
5 controller (9) that is stable at the time of requiring the movement and positioning of the cursor or pressure point.

The mobile terminal (2) completes its multimedia characteristics with a set of speakers (17) and a microphone (18) connected to the sound inputs and outputs  
10 of the controller integrated into the Geode motherboard (3).

The communication between the mobile terminal (2) and the support module (1) will be preferably carried out by radio frequency, using a protocol that works in the high  
15 frequency or microwave range. Preferably, the DECT protocol would be used.

The support module (1) preferably comprises a physical structure suitable to locate the mobile terminal (1) when it is not being used, being said terminal (2) activated or  
20 deactivated. The support (1) has a connection to the electricity supply (19) network and a stabilised power supply (14) that feeds a battery charger (15) so as to recharge the energy used from the batteries (6) of the terminal (2) during its uncoupled use of said support (1).  
25 The stated charger (15) could preferably be of the type

MAX712 which comprises a integrated chip (from the company  
MAXIM) and with monitoring of the state of the NiMH  
batteries (6) which are fitted into the mobile terminal  
(2). The data connection to the outside is carried out by a  
5 modem (13) with a suitable technology or a connection to a  
local area network (LAN) or wide area network (WAN).  
Preferably said modem (13) can be of the conventional  
technology type that is connectable to a RTB (basic  
telephone network), ADSL, ISDN (Integrated Services Digital  
10 Network), optic fiber technology, specialised communication  
networks or GSM (Global System Mobile) mobile  
communications networks.

For the permanent cordless connection between the  
support module (1) and the mobile terminal (2) the use of  
15 two DECT cordless communication modules (8 and 12) has been  
provided, one of these being installed in the support  
module (1) and in the mobile terminal (2), respectively.  
Said modules (8 and 12) have an effective communication  
radius of up to 50 metres, depending on the manufacturer  
20 and their characteristics, an approximate typical  
communication speed of 23 kbps (kilobits per second),  
however, the use of a cordless communication module by  
means of broadband microwaves, blue tooth technology or  
similar is not dismissed. As fixed communication  
25 connection, said terminal has a USB connector or similar



suitable for the direct download of data from the terminal  
(2) when it is connected on the support module (1). Said  
fixed connection from the mobile terminal (2) when it is  
placed on the support module (1) is carried out by means of  
5 a common plug (10 and 16) between both, said plug (10 and  
16) incorporates the connection between the charger (15)  
and the batteries (6) and the USB data transfer connection  
or similar from the modem (13).

In order to complete the description that is going to  
10 be made below and with the purpose of helping to give a  
better understanding of its characteristics, the present  
descriptive memorandum is accompanied by a set of drawings,  
which are by way of illustration and not limitative, where  
the most significant details of the invention are  
15 represented.

CLAIMS